EPA
United States Environmental Protection Agency
Office of Public Affairs
Region 5
230 South Dearborn Street
Chicago, Illinois 60604
Illinois • Indiana
Michigan • Minnesota
Ohio • Wisconsin

Proposed Plan for the Acme Solvent Reclaiming, Inc. Superfund Site

Winnebago County, Illinois — October 1990

PUBLIC MEETING

Date: October 18, 1990
Time: 7:00 p.m.
Place: Howard Johnson
Motor Lodge
3909 11th Street
Rockford, IL

PUBLIC COMMENT PERIOD

October 5 through
November 5, 1990

SITE LOCATION MAP

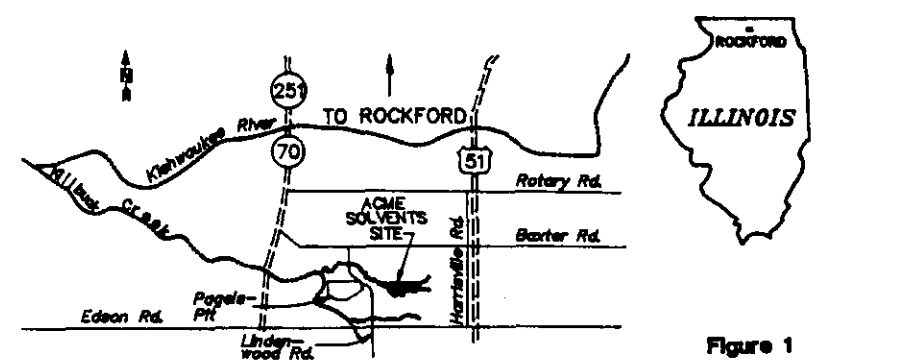

Figure 1

U.S. EPA AND IEPA PROPOSE A CLEANUP PLAN

This Proposed Plan identifies the alternatives preferred by the United States Environmental Protection Agency (U.S. EPA) and Illinois Environmental Protection Agency (IEPA) for cleaning up waste disposal areas (source areas), as well as contaminated soils, bedrock, and ground water at the Acme Solvent Reclaiming, Inc. (Acme Solvents) **Superfund** site in Morristown, Winnebago County, Illinois. This Plan also summarizes otheralternatives being considered for cleaning up this site.

U.S. EPA and IEPA are issuing this Proposed Plan as part of their public participation responsibilities under the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, also known as Superfund. This document summarizes information that can be found in greater detail in the Supplemental Technical Investigation (STI), **Endangerment Assessment (EA)**, **Engineering Evaluation/Cost Analysis (EE/CA)**, and Remedial Action Alternatives Evaluation (RAAE) reports, as well as other documents contained in the **Administrative Record** file for this site. The public is encouraged to review these documents and to submit comments on all of the alternatives presented in this Proposed Plan for the Acme Solvents site. U.S. EPA and IEPA will select a final remedy for the site only after the public has had an opportunity to comment on the Proposed Plan and the comments submitted have been reviewed and considered.

SITE BACKGROUND

The 20-acre Acme Solvents site is located on Lindenwood Road, south of Morristown, Illinois, and 5 miles south of Rockford, Illinois (see Figure 1). From 1960 until its closing in 1972, the site was used as a drum storage and disposal area for wastes generated by Acme Solvent Reclaiming, Inc. in Rockford. Waste paints, oils, solvents, and sludges are known to have accumulated at the site. Disposal practices consisted of emptying drums into lagoons and storing the empty drums at various open areas on the site. Sludge and other nonrecyclable materials were pumped from tanker trucks into the lagoons.

In 1981, ground-water sampling conducted by IEPA and the Winnebago County Public Health Department detected contamination in private drinking water wells adjacent to the site. In 1982, the site was placed on the U.S. EPA National Priorities List (NPL). An initial remedial investigation and feasibility study (RI/FS) was completed at the Acme Solvents site in 1984. The RI identified two aquifers beneath the site — a shallow aquifer and a deep aquifer. It also identified high concentrations of **volatile organic compounds (VOCs)** in soils, in the shallow aquifer downgradient of the site, and in residential drinking water wells. After the RI/FS was completed, U.S. EPA signed a **Record of Decision (ROD)** outlining how the soils should be cleaned up.

(Words in **bold** are defined in the glossary on pages 7 and 8.)

The ROD called for incinerating the contaminated soils. Instead, potentially responsible parties (PRPs) removed and disposed of 90 percent of the contaminated soil and sludges without U.S. EPA or IEPA consent.

To deal effectively with the remaining contamination, 22 PRPs involved with Acme Solvents entered into a Consent Order with U.S. EPA and IEPA. The Consent Order, signed in December 1986, required that the PRPs conduct an STI to further characterize the site and an RAAE to develop alternatives for cleaning up the site. In addition, the Consent Order required that home carbon treatment units (HCTUs) be provided to five residences with contaminated wells.

SUMMARY OF SITE RISKS

The STI report was completed in May 1990, and the results were summarized in a May 1990 fact sheet. Many VOCs were found in the shallow aquifer under the site, which is used by nearby residents as a water supply source. The deep aquifer, which is the main water source for many industrial and municipal wells, was not found to be contaminated. Soil sampling on the site showed elevated concentrations of VOCs, **polychlorinated biphenyls (PCBs)**, and **lead**, among other compounds.

The STI identified two waste disposal areas on-site. These areas consist of approximately 6,000 tons of waste material containing VOCs, **semivolatile organic compounds (SVOCs)**, PCBs, and lead in high concentrations.

In addition to the STI, an EA was conducted to estimate the public health and environmental problems that could result if the contamination at the Acme Solvents site is not remediated. The EA identified 16 chemicals as posing the greatest human health threat. These include VOCs such as benzene, 1,1-dichloroethene, tetrachloroethene, trichloroethene, vinyl chloride, as well as SVOCs, PCBs, and lead.

The results of the EA also showed that none of the residents living near the Acme Solvents site are currently exposed to site-related risks considered unacceptable to U.S. EPA. Unacceptable risks are those that may result in 1 additional cancer in 10,000 to 1,000,000 people exposed over a lifetime. Residents with HCTUs could be exposed to approximately 2 additional cancers in 10,000 people only if they drank untreated water or if they used untreated water for regular household purposes such as showering. However, the HCTUs are effectively protecting residents from these health risks. Trespassers on the site could also be subject to adverse health effects if they come into frequent contact with the waste areas on the site.

The EA also evaluated potential health risks if the contamination was not addressed and the site was developed for residential use. This future use scenario showed that future on-site residents would be exposed to an increased cancer risk, as well as other adverse health effects, if they used water from shallow wells drilled on or immediately adjacent to the site.

The contaminant concentrations in the waste disposal areas are many times higher than in other areas of the site. The waste area contamination, and VOC contamination in general (which can easily migrate to ground water), are the principal threats at the site.

Releases of hazardous substances from this site, if not addressed by the preferred alternative or one of the other measures discussed in this plan, may present an imminent and substantial endangerment to public health, welfare, and the environment.

SCOPE AND ROLE OF THE REMEDIAL ACTION

The purpose of the remedial action is to clean up all source areas remaining after the 1986 PRP cleanup, as well as all remaining soil, ground-water, and bedrock gas contamination. An additional goal is to protect residents near the site from health risks resulting from use of contaminated ground water.

A phased approach will be used to address source area contamination first (Phase I) and all remaining contamination second (Phase II). This phased approach is appropriate since it will remove the relatively high contaminant concentrations in the source areas quickly and lessen the potential for further contaminant migration.

One area of contamination that will not be addressed in this proposed cleanup plan is the ground-water contamination at the southeast corner of Pagel's Pit Landfill. Cleanup of this area will be the subject of a separate proposed plan after additional studies have been completed.

PHASE I CLEANUP ALTERNATIVES FOR SOURCE AREAS

Approximately 6,000 tons of soils and sludge are present in the source areas, and 8,000 gallons of liquid and sludge are present in the tanks. The Phase I cleanup is being handled as a short-term action (as U.S. EPA would do in an emergency response action). All Phase I alternatives include treating the liquid and sludge contained in the two tanks by off-site incineration and disposing of the tanks in a hazardous waste landfill. Both the landfill and the incinerator will be permitted under the **Resource Conservation and Recovery Act (RCRA).** The estimated cost of the tank removal is $379,000. The eight remedial alternatives being considered for the two waste disposal areas are described below (detailed information on the alternatives is presented in the EE/CA). All cleanup alternatives can be completed within 1 year of startup.

The no-action alternative was not evaluated as one of the Phase I alternatives because U.S. EPA has determined that no action would result in unacceptable risks.

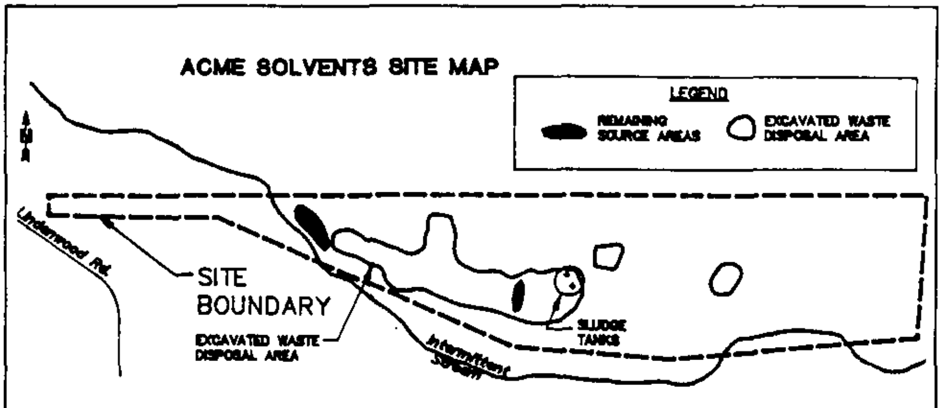

Figure 2

Alternative 1: Soil vapor extraction, RCRA cap, surface water diversions.

Alternative 1 provides for extracting VOCs using in-situ (in-place) soil vapor extraction. In-situ treatment of VOCs would consist of drilling a series of wells into the soil mound and the northwest portion of the site. A vacuum pump connected to the wells would extract air contaminated with VOCs. Clean air from the soil surface around the wells would then replace the air removed from the VOC-contaminated pore spaces. If air emissions from the vapor extraction system exceed health-based levels, off-gases would be treated by an after-burner or an activated carbon filter.

When 90 to 95 percent of the VOCs have been eliminated from the soils, the vapor extraction system would be removed. A cap constructed to comply with RCRA requirements would then be installed over the areas to isolate any residual contamination. Surface water diversions, such as trenches and berms, would be constructed to reduce water runon and possible infiltration.

Cost* of Alternative 1: $1,036,000

Alternative 2: Soil vapor extraction, in-situ solidification, surface water diversions.

Alternative 2 includes the same techniques as Alternative 1 to eliminate 90 to 95 percent of the VOCs in soils. However, rather than capping residual contamination in place, Alternative 2 would use in-situ **solidification** to immobilize PCBs and heavy metals such as lead. A specifically designed drilling rig would mix contaminated soils with solidification materials in-place to reduce the potential for contaminant migration. Treatability studies would be necessary to determine the effectiveness of solidification on organic contaminants. As in Alternative 1, surface water diversions would be used to reduce surface water runon and infiltration.

Cost of Alternative 2: $1,173,000

Alternative 3: Excavation, chemical oxidation, solidification, followed by (a) off-site disposal or (b) on-site placement and surface water diversions.

Alternative 3 provides for excavating soils and sludges, and then treating the wastes by chemical oxidation to destroy VOCs, SVOCs, and PCBs. Chemical oxidation consists of using hydrogen peroxide and a catalyst to react with contaminated material in a treatment reactor. The reactor would be equipped with activated carbon to adsorb VOCs. The remaining treatment residue would then be solidified to immobilize heavy metals such as lead. Treatability studies would be required to determine whether these technologies would be effective on-site contaminants.

Following solidification, the treated waste would be disposed of by one of two alternatives. Alternative 3a, off-site disposal, calls for completely removing treated, solidified material off-site to a RCRA-permitted hazardous waste landfill. Alternative 3b, on-site placement and surface water diversions, calls for leaving treated material on-site and imposing runon and infiltration controls to minimize the potential for contaminant migration.

Cost of Alternative 3a: $7,990,000
Cost of Alternative 3b: $6,390,000

Alternative 4: Excavation, soil washing, off-site treatment and disposal of washing liquids and contaminants, followed by (a) off-site soil disposal or (b) on-site placement and surface water diversions.

Alternative 4 provides for the excavation of soils and sludges, followed by a multistage soil washing treatment process to remove VOCs, SVOCs, PCBs, and heavy metals. Batches of contaminated soil would be mixed with washing fluids. Washing liquids would be drained and sent off-site for treatment. Treatability studies would be necessary to determine the effectiveness of the soil washing process before it can be implemented.

Two alternatives, off-site disposal (4a) and on-site disposal (4b), were evaluated for washed soils as discussed under Alternative 3.

Cost of Alternative 4a: $6,080,000
Cost of Alternative 4b: $4,680,000

Alternative 5: Excavation, followed by (a) off-site disposal or (b) low-temperature thermal stripping and off-site disposal.

Alternative 5 provides for excavating soils and sludges. Two alternatives were evaluated for excavated material. Alternative 5a, off-site disposal, calls for transporting contaminated soils and sludges directly to a RCRA-permitted hazardous waste landfill. Alternative 5b calls for volatilization of organic contaminants through a **low-temperature thermal stripping** (LTTS) process, then

*Costs for all alternatives, Phase I and Phase II, are **present net worth** costs.

off-site transport and disposal of the treated waste. During the LTTS process, excavated soils and sludges would be heated to approximately 350° to 800°F to drive off VOCs and SVOCs. Units operating at greater than 700°F would also drive off PCBs. Offgases resulting from the thermal treatment process would be either collected and condensed or passed through a high-temperature afterburner. Treatability studies would be conducted to evaluate the efficiency of this process in removing SVOCs and PBCs. This process would not treat heavy metals such as lead.

Cost of Alternative 5a: $1,190,000
Cost of Alternative 5b: $3,400,000

Alternative 6: Excavation, on-site incineration, surface water controls, followed by (a) on-site placement or (b) solidification and on-site placement.

Alternative 6 provides for excavating contaminated material; incinerating materials on-site to destroy PCBs, VOCs, and SVOCs; placing residuals that contain heavy metals on-site (Alternative 6a) or solidifying residuals that contain heavy metals and then placing the solidified material on-site (Alternative 6b); and installing surface water controls to reduce water runoff. A mobile incinerator would be brought on-site and then tested to determine if it destroys or removes 99.9999 percent of the contaminants, as required under RCRA and the **Toxic Substances Control Act (TSCA)**. Because most heavy metals cannot be completely destroyed through incineration, residuals placed on-site under Alternative 6a would contain some heavy metals; however, solidification (Alternative 6b) should effectively immobilize heavy metals.

Cost of Alternative 6a: $13,001,100
Cost of Alternative 6b: $14,001,100

Alternative 7: Excavation, off-site incineration.

Alternative 7 provides for excavating contaminated material, loading contaminated material into drums, and transporting drums off-site to a permitted hazardous waste incinerator. Excavated areas would be backfilled with clean soil.

Cost of Alternative 7: $13,000,000

Alternative 8: Excavation, low-temperature thermal stripping, solidification, followed by (a) off-site disposal or (b) on-site placement and surface water diversions.

Alternative 8 provides for excavating soils and sludges, and then treating them through the LTTS process described under Alternative 5b. Residual soil would then be solidified as described in Alternative 2. Two alternatives were evaluated for final disposal. These alternatives, Alternative 8a, off-site disposal, and Alternative 8b, on-site placement, are described in the discussion of Alternative 3.

Cost of Alternative 8a: $4,300,000
Cost of Alternative 8b: $2,700,000

PHASE II CLEANUP ALTERNATIVES FOR REMAINING SOIL, BEDROCK, AND GROUND WATER

Six remedial alternatives are being considered for cleaning up the remaining soil, bedrock, and ground-water contamination. In general, the alternatives become increasingly complex and build upon previous alternatives for more stringent and comprehensive approaches to site remediation. All cost estimates are based on 30 years of operation and maintenance. For Alternatives 2 through 6, a cost range is given, depending on the type of cap chosen (soil cover or RCRA-compliant cap) and the level of protection chosen, which ranges from 1 additional cancer in 10,000 to 1,000,000 people.

Alternative 1: No further action.

Under this alternative, no action would be taken to clean up the contaminated soil, bedrock, and ground water remaining after the Phase I cleanup. Ground water monitoring wells would be sampled for at least 5 years. The sampling would help determine the degree to which existing contamination migrates and is reduced by natural processes (attenuation). Every 5 years, a risk analysis would be performed to evaluate the site's threat to public health and the environment.

Cost of Alternative 1: $2,900,000

Alternative 2: Soil cover or RCRA cap, permanent alternate water supply, long-term monitoring.

This alternative first involves covering contaminated soil areas with a soil cover or RCRA cap. The capped areas would be revegetated, and the site would be fenced. Deed restrictions would also be imposed. The residences currently on HCTUs would be provided with a permanent alternate water supply. This supply would come either from the Pagel's Pit deep well or from a new deep water supply well. As in Alternative 1, monitoring wells would be sampled for at least 5 years to estimate contaminant attenuation and migration.

The cost of Alternative 2 ranges from $3,700,000 to $6,830,000 depending on the type of cover and level of protection chosen.

Alternative 3: Soil cover or RCRA cap, permanent alternate water supply, long-term monitoring, low-temperature thermal stripping.

This alternative is identical to Alternative 2 with one additional step. LTTS would be applied to contaminated soil to remove VOCs, SVOCs, and PCBs. In this process, soils would be excavated and heated to drive off organic

EVALUATION OF CLEANUP ALTERNATIVES

The **National Contingency Plan (NCP)** requires that the alternatives be evaluated on the basis of the nine evaluation criteria listed below. This section discusses how the preferred alternatives for Phases I and Phase II compare to the other alternatives considered.

U.S. EPA'S NINE EVALUATION CRITERIA FOR ADDRESSING HAZARDOUS WASTE SITES*

1. **Overall Protection**
2. **Compliance With Applicable or Relevant and Appropriate Requirements (ARARs)**
3. **Long-Term Effectiveness and Permanence**
4. **Reduction of Toxicity, Mobility, and Volume Through Treatment**
5. **Short-Term Effectiveness**
6. **Implementability**
7. **Cost**
8. **State Acceptance**
9. **Community Acceptance**

* Remedies selected for Superfund sites must meet all nine criteria.

1. Overall Protection

Phase I: All source area alternatives meet the CERCLA minimum requirement for protecting human health and the environment. Those alternatives that involve off-site landfilling of treated or untreated wastes and sludges (Alternatives 3a, 4a, 5a, 5b, 7, and 8a) provide the best overall protection because contaminants are completely removed from the site. Those alternatives that treat all contaminants before on-site landfilling (Alternatives 3b, 4b, 6, 8b) provide slightly less overall protection, although stringent standards would be met before treated material could be landfilled on-site. Those alternatives that treat only a portion of the contaminants (Alternatives 1 and 2) provide less overall protection.

Phase II: All Phase II alternatives will adequately protect human health and the environment through providing a permanent alternate water supply to affected residents and treating or containing remaining contaminants. The alternatives providing for both soil and ground-water treatment (Alternatives 5 and 6) provide the best overall protection. Alternatives 2 and 3 provide relatively less protection to future ground-water users because no ground-water treatment is proposed.

For both Phase I and Phase II, the no-action alternative is not protective of human health and the environment, and will not be considered further in this analysis.

2. Compliance with ARARs

Phase I: All source area alternatives evaluated should meet **applicable or relevant and appropriate requirements (ARARs)**; however, all alternatives requiring excavation and treatment (Alternatives 3 through 8) will require treatability testing to ensure that standards set under the RCRA **land disposal restrictions** (**LDR**s; 40 CFR Part 268) can be met. Alternative 5a would not meet LDRs because the materials would be landfilled off-site without treatment, and Alternative 6b may not meet LDRs because no provisions for metals treatment are included. All treatment residuals will be handled consistent with RCRA LDRs.

Another criterion to be considered is the TSCA cleanup policy for PCB spills. This policy requires that spills resulting in PCB contamination of greater than 50 ppm be cleaned up to a level of 10 ppm and covered with at least 10 inches of clean soil. All alternatives except 1 and 2 will meet this criterion.

Phase II: All Phase II alternatives will meet ARARs at the point of exposure;

however, Alternatives 2 and 3 will not meet ARARs for the ground water. These requirements are MCLs and MCLGs established under the Safe Drinking Water Act (40 CFR 141 and 143). All alternatives will meet RCRA LDR, closure, and post-closure requirements, if the RCRA-compliant cap option is chosen, but the soil cover option may not meet RCRA requirements.

3. Long-Term Effectiveness and Permanence

Phase I: All of the source area alternatives (except off-site incineration) will require treatability studies to assess their long-term effectiveness and permanence. Since Phase I is not intended to be the final solution for the site, this criterion is more important for Phase II.

Phase II: All alternatives include either a soil cover or RCRA cap, which will provide adequate long-term effectiveness against contaminants in surface soils as long as the cover or cap is properly maintained. However, those alternatives for treating the contaminants in ground water, soils, and bedrock, along with the soil cover or cap (Alternatives 6 and 8), provide the best long-term effectiveness and permanence.

4. Reduction of Toxicity, Mobility, and Volume Through Treatment

Phase I: Treatability studies would be needed for all source area alternatives to accurately determine which would best reduce the toxicity, mobility, and volume (TMV) of contamination through treatment. Those alternatives that treat all site contaminants (VOCs, SVOCs, PCBs, and metals), such as Alternatives 3, 4, 6, 7, and 8, provide the best reduction of TMV. Alternatives that treat only some of the contaminants, such as Alternatives 1, 2, and 5b, provide less reduction of TMV, and Alternative 5a provides no reduction of TMV.

Phase II: Of the Phase II alternatives, Alternative 6 best reduces the TMV because all contaminants that exceed risk-based levels would be treated. Alternative 5 provides slightly less reduction of TMV because remaining SVOCs and PCBs would be capped rather than treated; Alternatives 4, 3, and 2 provide progressively less reduction of TMV.

5. Short-Term Effectiveness

Phase I: All of the source area alternatives can be completed within 1 year. The alternatives that do not involve soil excavation (Alternatives 1 and 2) provide the best protection of workers and the community during the remedial action. For all other alternatives that involve soil excavation, emission controls and dust suppression will be used if necessary to protect workers and the community during implementation.

Phase II: All of the alternatives can be constructed in less than 1 year; however, ground-water cleanup under Alternatives 4, 5, and 6 may take 15 to 30 (or more) years. Soil vapor extraction may take 2 to 5 years to complete. As with the source area alternatives, those that do not require a large amount of excavation (Alternatives 2, 4, and 5) provide the best protection of the community and workers during construction; however, emission controls and other measures will be used as necessary to ensure protection from emissions during construction.

6. Implementability

Phase I: Many of the alternatives, including Alternatives 2, 3, 4, 5b, and 8, require treatability studies to ensure their effectiveness in treating the contaminants at the site. Incineration (Alternatives 6 and 7), if followed by solidification of the ash, is a proven technology for the site contaminants; however, a test burn is required by RCRA regulations prior to use of an on-site mobile incinerator. No treatability studies would be needed for Alternatives 1 and 5a. Most of these technologies are readily available, although the capacity of on-site and off-site incinerators is limited, as is the capacity of RCRA-permitted landfills.

Phase II: Most of the Phase II technologies under consideration use well-established, conventional, and widely available technologies. However, treatability studies would be required for alternatives that include LTTS (Alternatives 3 and 6a). Also, vapor extraction of bedrock contaminants has not been widely implemented. As a result, it is difficult to predict the cleanup levels that can be achieved by this technology.

7. Cost

Phase I: The source area alternatives can be ranked by cost as follows: Alternative 1 is least expensive, followed by Alternatives 2, 5a, 8b, 5b, 8a, 4b, 4a, 3b, 3a, 7, and 6. Technology costs range from $1,040,000 for soil vapor extraction followed by capping, to $13,100,000 for on-site incineration.

Phase II: Phase II alternatives can be ranked by cost as follows: Alternative 2 is the least expensive, followed by Alternatives 4, 3, 5, 6a, and 6b. Costs range from $3,700,000 for Alternative 2 to $38,963,000 for Alternative 6b depending on the level of protection chosen.

8. State Acceptance

The State of Illinois supports the preferred alternatives for both the Phase I and Phase II cleanups.

9. Community Acceptance

Community acceptance of the Phase I and Phase II preferred alternatives will be evaluated after the public comment period ends and will be described in the ROD for the Acme Solvents site.

contaminants. Treated soil would then be disposed of in an off-site RCRA landfill or returned to the excavated areas and covered with a RCRA cap.

The cost of Alternative 3 ranges from $9,400,000 to $10,890,000.

Alternative 4: Soil cover or RCRA cap, permanent alternate water supply, long-term monitoring, ground-water pump-and-treat, discharge of treated effluent.

This alternative is identical to Alternative 2, but would use a pump-and-treat system to remove VOCs from ground water. The pump-and-treat system would consist of extraction wells to remove contaminated ground water. This water would then be treated by a packed-column air stripper to remove VOCs. Treated water would be discharged to Killbuck Creek. If air emissions from the air stripper exceed health-based levels, offgases would be treated.

The cost of Alternative 4 ranges from $5,780,000 to $10,203,000.

Alternative 5: Soil cover or RCRA cap, permanent alternate water supply, long-term monitoring, pump-and-treat, soil and bedrock vapor extraction.

This alternative is similar to Alternative 4, but also includes vapor extraction. It is estimated that the vapor extraction system would have to operate for 2 to 5 years. If air emissions from the vapor extraction system exceed health-based levels, offgases would be treated. Vapor extraction is a proven technology in soils, but pilot studies would be needed to determine its effectiveness in bedrock.

The cost of Alternative 5 ranges from $7,948,000 to $12,475,000.

Alternative 6: Soil cover or RCRA cap, permanent alternate water supply, pump-and-treat, soil and bedrock vapor extraction, followed by (a) low-temperature thermal stripping or (b) off-site incineration and disposal.

This alternative is similar to Alternative 5 except that soils would be addressed by one of two alternatives. In Alternative 6a, soils exceeding the established action levels would be treated by LTTS as discussed in Alternative 3. In Alternative 6b, soils exceeding the established action levels would be incinerated off-site in a RCRA-permitted incinerator.

The cost of Alternative 6a ranges from $13,335,000 to $16,008,000.

THE PREFERRED ALTERNATIVE

Phase I: Alternative 8 Phase II: Alternative 5

PHASE I: SOURCE AREAS

The alternative U.S. EPA and IEPA prefer for the source areas is a combination of Alternative 8a (low-temperature thermal stripping followed by solidification, then off-site disposal at a RCRA-permitted hazardous waste landfill) and Alternative 8b (LTTS followed by solidification and on-site placement). Treatability studies will be performed to ensure that LTTS and solidification can meet minimum standards for treating organic contaminants in waste and metals in sludges. Residuals from the LTTS process will be tested for organic contaminants and by the RCRA Toxicity Characteristic Leaching Procedure (TCLP). If RCRA TCLP standards for metals are exceeded, residuals will be solidified. If LTTS followed by solidification meets the minimum standards (RCRA treatability variance levels for soil and debris), the treated material can be landfilled off-site at a RCRA-permitted facility. If LTTS followed by solidification can meet more stringent standards for on-site landfilling (concentrations pose no threat through direct contact and contaminant migration), treated material can be placed back in the excavated area and then covered with a RCRA cap under Phase II. Offgases from the LTTS process will be collected and condensed or destroyed in a high-temperature afterburner.

The cost for this portion of the remedy ranges from $2,700,000 (if all material is landfilled on-site) to $4,300,000 (if all material is landfilled off-site). These cost estimates assume that all material treated by LTTS will be further treated by solidification for lead. However, the need for solidifying all of the residuals is unlikely; therefore, the actual cost of remediation may be lower.

The liquids and sludges in the tanks will be sent to an off-site incinerator permitted under RCRA and TSCA, and the tanks will be disposed of at a RCRA-permitted hazardous waste landfill. The cost for this portion of the remedy is $379,000.

The total cost for Phase I of the preferred remedy ranges from $3,079,000 to $4,679,000.

PHASE II: REMAINING SOILS, BEDROCK AND GROUND WATER

The alternative U.S. EPA and IEPA prefer for the remaining soils, bedrock, and ground water is Alternative 5—soil cover, permanent alternate water supply, long-term monitoring, pump-and-treat, and soil and bedrock vapor extraction. A water main will be extended from a new deep well or from the Pagel's Pit water supply well to the residences currently on HCTUs, and three additional residences, and the existing HCTUs will be removed. A ground-water pump-and-treat system will be installed to capture all ground water outside the site boundary that exceeds a cumulative carcinogenic risk of approximately 1 additional cancer in 100,000 people. Ground water will also be collected if it contains noncarcinogens such as lead at levels that exceed pre-established standards and goals (**maximum contaminant levels, MCLs,** and **maximum contaminant level goals, MCLGs**). Ground water will be treated by air stripping, followed by carbon adsorption, if necessary. Treated water will then be discharged to Killbuck Creek or the intermittent stream that crosses the site in accordance with discharge standards set under the Clean Water Act.

VOCs remaining in soil and bedrock after the Phase I cleanup will be treated by vapor extraction. Pilot testing will be required to design and determine the effectiveness of the soil vapor extraction system, and to assess the feasibility of bedrock vapor extraction. Metals-contaminated soils will be tested for leachability and will be solidified if the extract exceeds the TCLP standards for metals. Soils containing contaminants that may pose a threat through direct contact will be consolidated and capped consistent with RCRA Subtitle C requirements. All areas in which materials are treated and backfilled on-site will also be capped. The requirements for the cap may be modified if the off-site disposal option is implemented for Phase I, and if testing of other treated soils shows that contamination will not migrate to ground water.

The remedy will also include (1) long-term monitoring to ensure that action levels are being met, (2) site fencing and deed restrictions to prevent use of shallow ground water under the site and to protect the soil cover, and (3) deed notices or advisories to protect potential on-site and off-site users of ground water until cleanup levels are met. Air emissions from the various processes will be monitored. These processes include air stripping, soil and bedrock vapor extraction, and soil excavation and consolidation. Offgas treatment, or other corrective actions, will be used if total air emissions from the site exceed an excess cancer risk of approximately 1 additional cancer in 100,000 people.

Construction of the water main can be started while the Phase I cleanup is being implemented. All other construction will start after Phase I is completed. The Phase II construction may take less than 1 year. Approximately 2 to 5 years may be required to remove contaminants from soils through vapor extraction; however, the ground-water cleanup may continue for 15 to 30 years. The total PNW cost for remediating the remaining contamination at the site using this preferred alternative is $12,247,000.

The cost for both the Phase I and Phase II cleanups ranges from $15,326,000 to $16,926,000.

SUMMARY OF THE PREFERRED ALTERNATIVE

In summary, Alternative 8 for source areas and Alternative 5 for all other site contamination will substantially reduce risks through treating the principal threats remaining at the site (source areas and contaminants that have migrated or will migrate to ground water) and will provide for the safe management of other materials that will remain at the site. The preferred alternatives are believed to provide the best balance with respect to the evaluation criteria. Based on available information, U.S. EPA and IEPA believe the preferred alternatives would protect human health and the environment, would comply with ARARs, would be cost effective, and would use permanent solutions and alternative treatment technologies to the maximum extent practical. Because these alternatives would use LTTS, vapor extraction, and air stripping to remove organic contaminants, and solidification to immobilize inorganic contaminants, they would also meet the statutory preference for a remedy that involves treatment as a principal element.

ROLE OF THE COMMUNITY IN THE PROCESS

For a complete description of the investigation and the alternatives under consideration for the site, interested parties can review the documents available in the following information repository:

Rockford Public Library
215 North Wyman Street
Rockford, Illinois 61101
(815) 965-6731

The administrative record, which contains all of the documents that EPA will use to select the final cleanup remedy for the site, is also located at this address.

Written comments will be accepted during a public comment period held between October 5 and November 5, 1990. Members of the community are encouraged to attend a public meeting on October 18, 7:00 p.m., at the Howard Johnson Motor Lodge in Rockford, to discuss the proposed alternatives for remediating contamination at the site. Verbal comments will be recorded during the meeting.

Comments received during the comment period and at the public meeting will be addressed in a Responsiveness Summary, which will be included in the Record of Decision (ROD) and will be made public in the information repository after the ROD is signed.

If you have comments or questions about the Acme Solvents site, please address them to:

MaryAnn LaFaire
Community Relations Coordinator
U.S. EPA Region 5
Office of Public Affairs (5PA-14)
230 S. Dearborn Street
Chicago, Illinois 60604
(312) 886-1728

Allison Hiltner
Remedial Project Manager
U.S. EPA Region 5
Office of Superfund (5HS-11)
230 S. Dearborn Street
Chicago, Illinois 60604
(312) 353-6417

Toll Free Number: 1-800-572-2515 (9:00 a.m. to 4:30 p.m. Central Time)

MAILING LIST ADDITIONS AND CORRECTIONS

To be placed on the list to receive information about the Acme Solvents site, or to make corrections to your address, please fill out and mail this form to:

MaryAnn LaFaire
Community Relations Coordinator
U.S. EPA Region 5

Office of Public Affairs (5PA-14)
230 S. Dearborn Street
Chicago, Illinois 60604

NAME____________________

AFFILIATION____________________

ADDRESS____________________

CITY__________ STATE_____ ZIP________

PHONE (   )__________

GLOSSARY

Administrative Record - A compilation of documents that U.S. EPA either considered or relied upon in selecting remedial or removal actions to be taken at a Superfund site.

Applicable or Relevant and Appropriate Requirements (ARARs) - Federal, state, and local environmental and public health laws with which remedial action alternatives must comply.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) - A federal law passed in 1980 and revised in 1986 by the Superfund Amendments and Reauthorization Act. CERCLA created a special tax that goes into a trust fund, commonly known as "**Superfund**," to investigate and clean up abandoned or uncontrolled hazardous waste sites.

Endangerment Assessment (EA) - A study conducted, as a supplement to a remedial investigation, to determine the associated short- and long-term risks posed to public health and the environment.

Engineering Evaluation/Cost Analysis (EE/CA) - A report, as part of an assessment process, that (1) identifies an environmental problem that requires quick attention and (2) develops solutions focused on a portion of the site, such as the source area, that can be implemented quickly to lessen the overall risk prior to the final site cleanup.

Land Disposal Restrictions (LDR) - Federal regulations that require U.S. EPA to evaluate all hazardous waste disposed of in land disposal units to determine whether land disposal of the waste is protective of human health and the environment. For wastes that are restricted from land disposal, U.S. EPA is required to set levels or methods of treatment that substantially diminish a waste's toxicity or reduce the likelihood that a waste's hazardous constituents will migrate.

Lead - A metal used for many purposes, including the manufacture of paint, batteries, and other products. Lead can be toxic when ingested, or when dusts or fumes containing lead are inhaled. Long-term exposure to small amounts of lead can cause brain, bone, or nerve damage.

Low-Temperature Thermal Stripping (LTTS) - A process in which excavated soils are heated to a high temperature in order to drive off contaminates.

Maximum Contaminant Levels (MCL) - Enforceable federal standards for the maximum permissible level of contaminants in drinking water. MCLs are set as close to the **Maximum Contaminant Level Goals** as feasible.

Maximum Contaminant Level Goals (MCLG) - Health goals established by U.S. EPA for contaminants in drinking water at which no known or anticipated adverse health effects occur, allowing for an adequate margin of safety. MCLGs are not enforceable standards.

National Contingency Plan (NCP) - The federal regulation that sets the framework for the Superfund program. The NCP identifies the governmental organizations involved in remedial response, outlines their roles and responsibilities, and discusses the interrelationships of these organizations. In addition, the NCP provides guidelines for planning and conducting response activities.

(continued on page 8)

GLOSSARY (continued)

Polychlorinated Biphenyls (PCBs) - A family of organic compounds used since 1926 in electric transformers as insulators and coolants and in lubricants, carbonless copy paper, adhesives, and caulking compounds. PCBs do not break down into harmless compounds. Instead, they remain in the environment for years. U.S. EPA banned the use of PCBs in 1976. Long-term exposure to PCBs can cause liver damage and cancer.

Present Net Worth (PNW) - An economic term used to describe today's cost for a Superfund cleanup and reflect the discounted value of future costs. A present worth cost estimate includes construction and future operation and maintenance costs. U.S. EPA uses present net worth values when calculating the cost of alternatives for long-term projects.

Record of Decision (ROD) - A document issued by U.S. EPA that describes the corrective action to be taken at a Superfund site. The corrective action is selected after public comments on the proposed plan are considered.

Resource Conservation and Recovery Act (RCRA) - A federal law that regulates the manufacture, transport, and disposal of hazardous waste. The law, enacted in 1976, provides for monitoring wastes from "cradle to grave." Part of RCRA regulates the construction and operation of hazardous waste facilities.

Semivolatile Organic Compounds (SVOCs) - A group of chemicals containing organic carbon that evaporate in air and dissolve in water at a slower rate than VOCs. SVOCs at the site include napthalene and bis(2ethylhexyl)phthalate.

Solidification - The process by which contaminants are mixed with a hardening agent, like cement, and become less permeable and susceptible to transport by water.

Superfund - A trust fund created under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) to investigate and clean up abandoned or uncontrolled hazardous waste sites.

Toxic Substances Control Act (TSCA) - A federal law that regulates the manufacture of many chemical substances. The law requires that risks associated with new chemical substances be reviewed by U.S. EPA before they are introduced into the market place. TSCA also regulates the production of existing chemical substances.

Volatile Organic Compounds (VOCs) - Any of a number of chemicals that contain organic carbon and readily evaporate from liquids to gases when exposed to air. VOCs are a more significant problem in ground water than in surface water because they cannot evaporate in the subsurface. Exposure to VOCs over a long period of time may cause a variety of health-related problems. VOCs at the site include benzene, 1,1-dichloroethene, tetrachloroethene, trichloroethene, vinyl chloride, and xylene.

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INSIDE: **Proposed Cleanup Plan for the Acme Solvent Reclaiming, Inc. Site**